

**Pneumatics components specification list
according to BV1.13, revision index no. 12
of Volkswagen Group**

Application: body-in-white

**Version:
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Version 1.2



ENGINEERING YOUR SUCCESS.

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1 Change History

| Version | Date | Change | Page |
|---------|------------|--|-------|
| 1.0 | 07.12.2009 | First Version | all |
| 1.1 | 30.05.2012 | Revised Edition | all |
| 1.2 | 29.04.2013 | Application body-in-white added | cover |
| 1.2 | 29.04.2013 | Series P1E-T replaced to P1D-T | 7 |
| 1.2 | 29.04.2012 | Series NZ replaced to P1P | 10-11 |
| 1.2 | 29.04.2013 | Solenoid valve ISO 15407 in revision | 19 |
| 1.2 | 29.04.2013 | 39V1663: order code replaced | 22 |
| 1.2 | 29.04.2013 | 30D1475: soft tubing dimensions an colours added | 22-23 |
| 1.2 | 29.04.2013 | 39D1421: Mat-No. 7072 +7073 added | 23 |
| 1.2 | 29.04.2013 | Material number and order codes adjusted | 35-37 |
| 1.2 | 03.07.2013 | Material number added (4.2.3.3) | 20 |

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3 Notes

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You need to analyse all aspects of your application and the information on the product or system even in the current product catalogue. Due to the versatility of operating conditions and applications for these products or systems, the user alone is responsible for the final selection of the product or system according to his own analyses and tests, and he must ensure that all performance specifications, safety and warning notes for the application are complied with.

The release list was drawn up based on the current BV 1.13 equipment regulation of the Volkswagen Group. For components that are not listed in this table, written special approval is required.

General technical information on the pneumatic components can be viewed and downloaded under the following web link:

Pneumatic website: www.parker.com/euro_pneumatic

The bullets of this component clearance are identical to those of the current BV1.13.

Pneumatic release list: www.parker.com/automotive/vw

4 Components

4.1 Power conversion

4.1.2 Pneumatic cylinders

4.1.2.1 Double-acting cylinders Ø 32 to 200 mm DIN ISO 15552


Operational characteristics

Operational pressure: **max. 10 bar**
 Operational temperature:
 Ø 32 to 125 mm **-20 °C to +80 °C**
 Ø 160 to 200 mm **-10 °C to +70 °C**






VW standard: 39D 20000

| ISO 15552 Cylinders, double-acting, diameter 32 to 125 mm, Series P1D | | | | | | |
|---|-----|--------|-----------------|-----------------|-----------------------------|-----------------------------|
| Type | Ø | Stroke | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| Series P1D-S-Cylinders profil version | 32 | 25 | 21-5 | 2170 | P1D-S032MS-0025 | PDE2570TCUK |
| | 32 | 50 | 21-5 | 2146 | P1D-S032MS-0050 | PDE2570TCUK |
| | 32 | 80 | 21-5 | 2147 | P1D-S032MS-0080 | PDE2570TCUK |
| | 50 | 25 | 21-5 | 2148 | P1D-S050MS-0025 | PDE2570TCUK |
| | 50 | 50 | 21-5 | 2113 | P1D-S050MS-0050 | PDE2570TCUK |
| | 50 | 80 | 21-5 | 2150 | P1D-S050MS-0080 | PDE2570TCUK |
| | 50 | 100 | 21-5 | 2151 | P1D-S050MS-0100 | PDE2570TCUK |
| | 50 | 125 | 21-5 | 2172 | P1D-S050MS-0125 | PDE2570TCUK |
| | 63 | 25 | 21-5 | 2152 | P1D-S063MS-0025 | PDE2570TCUK |
| | 63 | 50 | 21-5 | 2153 | P1D-S063MS-0050 | PDE2570TCUK |
| | 63 | 80 | 21-5 | 2154 | P1D-S063MS-0080 | PDE2570TCUK |
| | 63 | 100 | 21-5 | 2155 | P1D-S063MS-0100 | PDE2570TCUK |
| | 63 | 125 | 21-5 | 2173 | P1D-S063MS-0125 | PDE2570TCUK |
| | 63 | 160 | 21-5 | 2156 | P1D-S063MS-0160 | PDE2570TCUK |
| | 63 | 200 | 21-5 | 2174 | P1D-S063MS-0200 | PDE2570TCUK |
| | 80 | 25 | 21-5 | 2175 | P1D-S080MS-0025 | PDE2570TCUK |
| | 80 | 50 | 21-5 | 2176 | P1D-S080MS-0050 | PDE2570TCUK |
| | 80 | 80 | 21-5 | 2157 | P1D-S080MS-0080 | PDE2570TCUK |
| | 80 | 100 | 21-5 | 2158 | P1D-S080MS-0100 | PDE2570TCUK |
| | 80 | 125 | 21-5 | 2159 | P1D-S080MS-0125 | PDE2570TCUK |
| | 80 | 160 | 21-5 | 2177 | P1D-S080MS-0160 | PDE2570TCUK |
| | 80 | 200 | 21-5 | 2178 | P1D-S080MS-0200 | PDE2570TCUK |
| | 100 | 25 | 21-5 | 2179 | P1D-S100MS-0025 | PDE2570TCUK |
| | 100 | 50 | 21-5 | 2180 | P1D-S100MS-0050 | PDE2570TCUK |
| | 100 | 80 | 21-5 | 2181 | P1D-S100MS-0080 | PDE2570TCUK |
| | 100 | 100 | 21-5 | 2182 | P1D-S100MS-0100 | PDE2570TCUK |
| | 100 | 160 | 21-5 | 2160 | P1D-S100MS-0160 | PDE2570TCUK |
| | 100 | 200 | 21-5 | 2183 | P1D-S100MS-0200 | PDE2570TCUK |
| | 125 | 50 | 21-5 | 2264 | P1D-S125MS-0050 | PDE2570TCUK |
| | 125 | 80 | 21-5 | 2265 | P1D-S125MS-0080 | PDE2570TCUK |
| 125 | 100 | 21-5 | 2184 | P1D-S125MS-0100 | PDE2570TCUK | |
| 125 | 125 | 21-5 | 2272 | P1D-S125MS-0125 | PDE2570TCUK | |
| 125 | 160 | 21-5 | 2273 | P1D-S125MS-0160 | PDE2570TCUK | |
| 125 | 200 | 21-5 | 2161 | P1D-S125MS-0200 | PDE2570TCUK | |
| 125 | 250 | 21-5 | 2274 | P1D-S125MS-0250 | PDE2570TCUK | |

| ISO 15552 Cylinders double acting, diameter 160 to 200 mm, Series P1D-T | | | | | | |
|--|-----|--------|-----------------|----------|-----------------|-----------------------------|
| Type | Ø | Stroke | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| Cylinders Series P1D-T Tie rod version  | 160 | 100 | 21-5 | 2275 | P1D-T160MS-0100 | PDE2667TCUK |
| | 160 | 160 | 21-5 | 2276 | P1D-T160MS-0160 | PDE2667TCUK |
| | 160 | 200 | 21-5 | 2277 | P1D-T160MS-0200 | PDE2667TCUK |
| | 160 | 250 | 21-5 | 2280 | P1D-T160MS-0250 | PDE2667TCUK |
| | 160 | 400 | 21-5 | 2281 | P1D-T160MS-0400 | PDE2667TCUK |
| | 160 | 500 | 21-5 | 2282 | P1D-T160MS-0500 | PDE2667TCUK |
| | 200 | 160 | 21-5 | 2283 | P1D-T200MS-0160 | PDE2667TCUK |
| | 200 | 200 | 21-5 | 2284 | P1D-T200MS-0200 | PDE2667TCUK |
| | 200 | 400 | 21-5 | 2285 | P1D-T200MS-0400 | PDE2667TCUK |
| | 200 | 500 | 21-5 | 2286 | P1D-T200MS-0500 | PDE2667TCUK |

4.1.2.1.1 Fastener elements / 39D 20000

| Type | Zyl.- Ø | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|--|---------|-----------------|----------|-------------|-----------------------------|
| Flange MF1/MF2, ISO 15552-12  | 32 | 21-5 | 2326 | P1C-4KMB | PDE2570TCUK |
| | 50 | 21-5 | 2327 | P1C-4MMB | PDE2570TCUK |
| | 63 | 21-5 | 2328 | P1C-4NMB | PDE2570TCUK |
| | 80 | 21-5 | 2329 | P1C-4PMB | PDE2570TCUK |
| | 100 | 21-5 | 2330 | P1C-4QMB | PDE2570TCUK |
| | 125 | 21-5 | 2331 | P1C-4RMB | PDE2570TCUK |
| | 160 | 21-5 | 2332 | PD23410 | PDE2667TCUK |
| | 200 | 21-5 | 2333 | PD24924 | PDE2667TCUK |
| Pivot block with rigid bearing, ISO 15552-12  | 32 | 21-5 | 2291 | P1C-4KMD | PDE2570TCUK |
| | 50 | 21-5 | 2131 | P1C-4MMD | PDE2570TCUK |
| | 63 | 21-5 | 2290 | P1C-4NMD | PDE2570TCUK |
| | 80 | 21-5 | 2292 | P1C-4PMD | PDE2570TCUK |
| | 100 | 21-5 | 2293 | P1C-4QMD | PDE2570TCUK |
| | 125 | 21-5 | 2294 | P1C-4RMD | PDE2570TCUK |
| Clevis bracket MP2 (incl. bolt), ISO 15552-12  | 32 | 21-5 | 2298 | P1C-4KMT | PDE2570TCUK |
| | 50 | 21-5 | 2299 | P1C-4MMT | PDE2570TCUK |
| | 63 | 21-5 | 2300 | P1C-4NMT | PDE2570TCUK |
| | 80 | 21-5 | 2301 | P1C-4PMT | PDE2570TCUK |
| | 100 | 21-5 | 2302 | P1C-4QMT | PDE2570TCUK |
| | 125 | 21-5 | 2303 | P1C-4RMT | PDE2570TCUK |
| | 160 | 21-5 | 2304 | P1C-4SMTB | PDE2667TCUK |
| | 200 | 21-5 | 2305 | P1C-4TMTB | PDE2667TCUK |

| | | | | | |
|--|-----|------|------|-----------|-----------------------------|
| Clevis bracket GA (incl. bolt), ISO 15552-12  | 32 | 21-5 | 2306 | P1C-4KMCA | PDE2570TCUK |
| | 50 | 21-5 | 2307 | P1C-4MMCA | PDE2570TCUK |
| | 63 | 21-5 | 2308 | P1C-4NMCA | PDE2570TCUK |
| | 80 | 21-5 | 2309 | P1C-4PMCA | PDE2570TCUK |
| | 100 | 21-5 | 2310 | P1C-4QMCA | PDE2570TCUK |
| | 125 | 21-5 | 2311 | P1C-4RMCA | PDE2570TCUK |
| Pivot bracket with swivel bearing, VDMA 24562  | 32 | 21-5 | 2334 | P1C-4KMA | PDE2570TCUK |
| | 50 | 21-5 | 2355 | P1C-4MMA | PDE2570TCUK |
| | 63 | 21-5 | 2336 | P1C-4NMA | PDE2570TCUK |
| | 80 | 21-5 | 2337 | P1C-4PMA | PDE2570TCUK |
| | 100 | 21-5 | 2338 | P1C-4QMA | PDE2570TCUK |
| | 125 | 21-5 | 2339 | P1C-4RMA | PDE2570TCUK |
| Swivel rod eye, DIN ISO 8139  | 32 | 21-5 | 2321 | P1C-4KRS | PDE2570TCUK |
| | 50 | 21-5 | 2322 | P1C-4MRS | PDE2570TCUK |
| | 63 | 21-5 | 2322 | P1C-4MRS | PDE2570TCUK |
| | 80 | 21-5 | 2323 | P1C-4PRS | PDE2570TCUK |
| | 100 | 21-5 | 2323 | P1C-4PRS | PDE2570TCUK |
| | 125 | 21-5 | 2324 | P1C-4RRS | PDE2570TCUK |
| | 160 | 21-5 | 2325 | KY6863 | PDE2667TCUK |
| | 200 | 21-5 | 2325 | KY6863 | PDE2667TCUK |
| Clevis, DIN ISO 8140, with bolt  | 32 | 21-5 | 2316 | P1C-4KRC | PDE2570TCUK |
| | 50 | 21-5 | 2317 | P1C-4MRC | PDE2570TCUK |
| | 63 | 21-5 | 2317 | P1C-4MRC | PDE2570TCUK |
| | 80 | 21-5 | 2318 | P1C-4PRC | PDE2570TCUK |
| | 100 | 21-5 | 2318 | P1C-4PRC | PDE2570TCUK |
| | 125 | 21-5 | 2319 | P1C-4RRC | PDE2570TCUK |
| | 160 | 21-5 | 2320 | KY6867 | PDE2667TCUK |
| | 200 | 21-5 | 2320 | KY6867 | PDE2667TCUK |

4.1.2.2 Double-acting small cylinders Ø 16 and 25 mm DIN 6432



Operational characteristics

Operational pressure: **max. 10 bar**
 Operational temperature: **-20 °C** **+80 °C**



| ISO 6432 Cylinders double acting, diameter 16 and 25 mm, Series P1A | | | | | | |
|---|----|--------|-----------------|----------|-----------------|-----------------------------|
| Type | Ø | Stroke | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| Mini-cylinder series P1A | 16 | 25 | 21-5 | 8473 | P1A-S016DS-0025 | PDE2564TCUK |
| | 16 | 50 | 21-5 | 8474 | P1A-S016DS-0050 | PDE2564TCUK |
| | 25 | 25 | 21-5 | 8476 | P1A-S025DS-0025 | PDE2564TCUK |
| | 25 | 50 | 21-5 | 8477 | P1A-S025DS-0050 | PDE2564TCUK |
| | 25 | 100 | 21-5 | 8478 | P1A-S025DS-0100 | PDE2564TCUK |

4.1.2.2.1 Fastening element DIN ISO 8139, DIN ISO 8140

| Type | Cyl.- Ø | Item Number | Data Sheet |
|--|---------|-------------|-----------------------------|
| Swivel rod eye, DIN ISO 8139  | 16 | P1A-4DRS | PDE2564TCUK |
| | 25 | P1A-4JRS | PDE2564TCUK |
| Clevis, DIN ISO 8140, with bolt  | 16 | P1A-4DRC | PDE2564TCUK |
| | 25 | P1A-4JRC | PDE2564TCUK |

4.1.2.3 Compact short stroke cylinders DIN ISO 21287



Operational characteristics



Betriebstemperatur: **20 °C bis +80 °C**

Betriebsdruck:

Ø 20 bis 25 mm **1 bis 10 bar**

Ø 32 bis 100 mm **0,5 bis 10 bar**

| Diameter 20-25 mm, Series P1P | | | | |
|--|----|------|-----------------|-----------------------------|
| Type | Ø | lift | order code | catalogue |
| Double-acting, piston rod with female thread  | 20 | 10 | P1PS020DS7G0010 | PDE2660TCUK |
| | 20 | 30 | P1PS020DS7G0030 | PDE2660TCUK |
| | 25 | 10 | P1PS025DS7G0010 | PDE2660TCUK |
| | 25 | 30 | P1PS025DS7G0030 | PDE2660TCUK |
| double acting, guided against rotation  | 20 | 10 | P1PG020DS7G0010 | PDE2660TCUK |
| | 20 | 30 | P1PG020DS7G0030 | PDE2660TCUK |
| | 25 | 10 | P1PG025DS7G0010 | PDE2660TCUK |
| | 25 | 30 | P1PG025DS7G0030 | PDE2660TCUK |

| Diameter 32-100 mm, Series P1P | | | | |
|---|-----|------|-----------------|-----------------------------|
| Type | Ø | lift | Order code | catalogue |
| Double-acting, piston rod with female thread  | 32 | 10 | P1PS032DS7G0010 | PDE2660TCUK |
| | 32 | 30 | P1PS032DS7G0030 | PDE2660TCUK |
| | 40 | 10 | P1PS040DS7G0010 | PDE2660TCUK |
| | 40 | 30 | P1PS040DS7G0030 | PDE2660TCUK |
| | 50 | 10 | P1PS050DS7G0010 | PDE2660TCUK |
| | 50 | 30 | P1PS050DS7G0030 | PDE2660TCUK |
| | 63 | 10 | P1PS063DS7G0010 | PDE2660TCUK |
| | 63 | 30 | P1PS063DS7G0030 | PDE2660TCUK |
| | 80 | 10 | P1PS080DS7G0010 | PDE2660TCUK |
| | 80 | 30 | P1PS080DS7G0030 | PDE2660TCUK |
| | 100 | 10 | P1PS100DS7G0010 | PDE2660TCUK |
| | 100 | 30 | P1PS100DS7G0030 | PDE2660TCUK |
| double acting, guided against rotation  | 32 | 10 | P1PG032DS7G0010 | PDE2660TCUK |
| | 32 | 30 | P1PG032DS7G0030 | PDE2660TCUK |
| | 40 | 10 | P1PG040DS7G0010 | PDE2660TCUK |
| | 40 | 30 | P1PG040DS7G0030 | PDE2660TCUK |
| | 50 | 10 | P1PG050DS7G0010 | PDE2660TCUK |
| | 50 | 30 | P1PG050DS7G0030 | PDE2660TCUK |
| | 63 | 10 | P1PG063DS7G0010 | PDE2660TCUK |
| | 63 | 30 | P1PG063DS7G0030 | PDE2660TCUK |
| | 80 | 10 | P1PG080DS7G0010 | PDE2660TCUK |
| | 80 | 30 | P1PG080DS7G0030 | PDE2660TCUK |
| | 100 | 10 | P1PG100DS7G0010 | PDE2660TCUK |
| | 100 | 30 | P1PG100DS7G0030 | PDE2660TCUK |

4.1.2.4 Cylinders for design-related exceptions

4.1.2.4.1 Series P1D-T...MF high temperature version

Operational characteristics

Operational pressure: **max. 10 bar**
 Operational temperature: **-10 °C to +150 °C**

4.1.2.4.2 Series P1D-T...QC/QR metal wiper

with metal wiper and hard chrome-plated piston rod for extreme dirt accumulation

Operational characteristics

Operational pressure: **max. 10 bar**
 Operational temperature: **-20 °C to +80 °C**

Data Sheet: [PDE2570TCUK](#)

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| P | 1 | D | - | T | | | | | | | - | | | |

| | |
|-------------------------|---------------------|
| Cylinder-Ø mm | Stroke mm |
| 032 | 0025 ¹⁾ |
| 040 | 0050 |
| 050 | 0080 |
| 063 | 0100 ²⁾ |
| 080 | 0125 ²⁾ |
| 100 | 0160 ³⁾ |
| 125 | 0200 ³⁾ |
| | 0250 ⁴⁾ |

| Specification | |
|---------------|---|
| MS | Standard cylinder, -20° bis +80°C |
| MF | High temperature version, -10° bis +150°C |
| QC | Metal scraper, chromium-plated steel piston rod, -20° bis +80°C |
| QR | Metal scraper, chromium plated stainless steel piston rod, -20° bis +80°C |

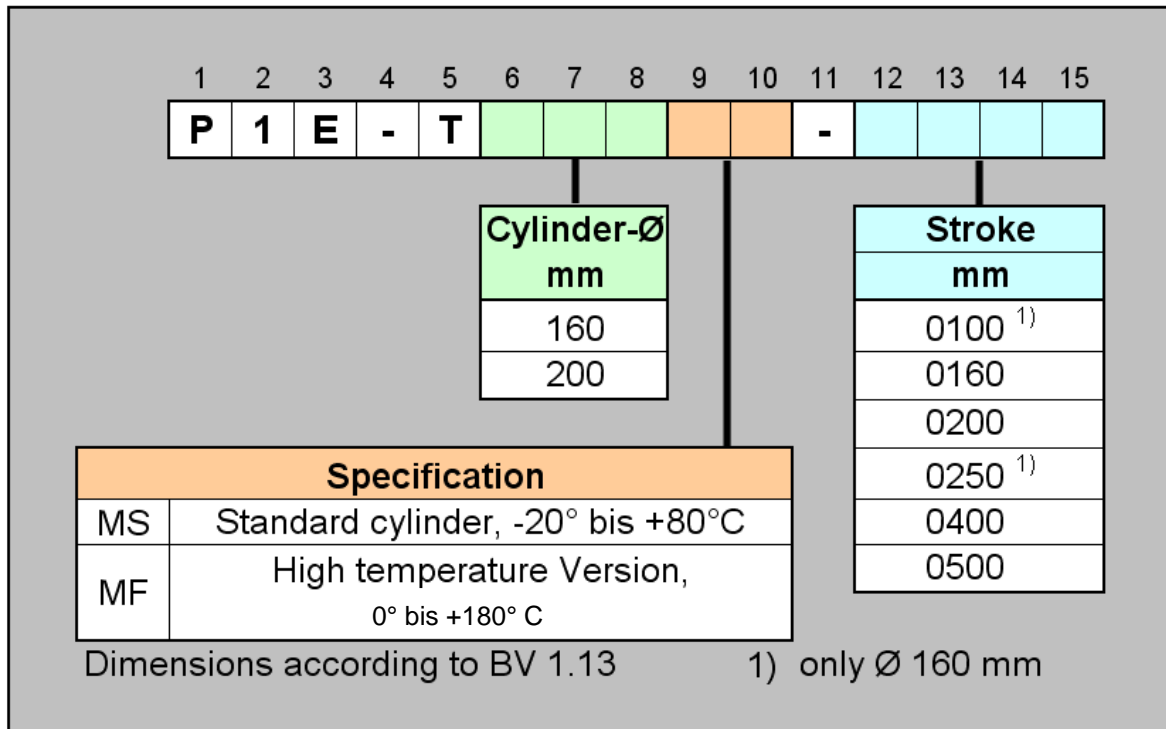
Dimensions according to BV 1.13

1) only Ø 32 - 100 mm
 2) only Ø 50 - 125 mm
 3) only Ø 63 - 125 mm
 4) only Ø 125 mm

4.1.2.4.3 Series P1E-T...MF high temperature version

Operational characteristics

Operational pressure: **max. 10 bar**
 Operational temperature: **0 °C to +180 °C**
 Data Sheet: [PDE2580TCUK](#)



4.1.2.4.4 Rodless cylinders -> usage only after consultation with VW planning and operation.

Operational pressure: **max. 8 bar**
 Operational temperature: **-10 °C to +80 °C**

| Name (Type) | Ø | Lift | Item No. | Data Sheet |
|-------------|----|------|---------------------|---------------------------|
| | 16 | 125 | OSP-P16-00000-00125 | P-A4P011E |
| | 16 | 160 | OSP-P16-00000-00160 | P-A4P011E |
| | 16 | 200 | OSP-P16-00000-00200 | P-A4P011E |
| | 16 | 250 | OSP-P16-00000-00250 | P-A4P011E |
| | 16 | 320 | OSP-P16-00000-00320 | P-A4P011E |
| | 16 | 400 | OSP-P16-00000-00400 | P-A4P011E |
| | 16 | 500 | OSP-P16-00000-00500 | P-A4P011E |
| | 16 | 1000 | OSP-P16-00000-01000 | P-A4P011E |
| | 25 | 125 | OSP-P25-00000-00125 | P-A4P011E |
| | 25 | 160 | OSP-P25-00000-00160 | P-A4P011E |
| | 25 | 200 | OSP-P25-00000-00200 | P-A4P011E |
| | 25 | 250 | OSP-P25-00000-00250 | P-A4P011E |
| | 25 | 320 | OSP-P25-00000-00320 | P-A4P011E |
| | 25 | 400 | OSP-P25-00000-00400 | P-A4P011E |
| | 25 | 500 | OSP-P25-00000-00500 | P-A4P011E |
| | 25 | 1000 | OSP-P25-00000-01000 | P-A4P011E |

Component specification



| Name (Type) | Ø | Lift | Item No. | Data Sheet |
|-------------|----|------|---------------------|---------------------------|
| | 32 | 125 | OSP-P32-00000-00125 | P-A4P011E |
| | 32 | 160 | OSP-P32-00000-00160 | P-A4P011E |
| | 32 | 200 | OSP-P32-00000-00200 | P-A4P011E |
| | 32 | 250 | OSP-P32-00000-00250 | P-A4P011E |
| | 32 | 320 | OSP-P32-00000-00320 | P-A4P011E |
| | 32 | 400 | OSP-P32-00000-00400 | P-A4P011E |
| | 32 | 500 | OSP-P32-00000-00500 | P-A4P011E |
| | 32 | 1000 | OSP-P32-00000-01000 | P-A4P011E |
| | 40 | 125 | OSP-P40-00000-00125 | P-A4P011E |
| | 40 | 160 | OSP-P40-00000-00160 | P-A4P011E |
| | 40 | 200 | OSP-P40-00000-00200 | P-A4P011E |
| | 40 | 250 | OSP-P40-00000-00250 | P-A4P011E |
| | 40 | 320 | OSP-P40-00000-00320 | P-A4P011E |
| | 40 | 400 | OSP-P40-00000-00400 | P-A4P011E |
| | 40 | 500 | OSP-P40-00000-00500 | P-A4P011E |
| | 40 | 1000 | OSP-P40-00000-01000 | P-A4P011E |
| | 50 | 125 | OSP-P50-00000-00125 | P-A4P011E |
| | 50 | 160 | OSP-P50-00000-00160 | P-A4P011E |
| | 50 | 200 | OSP-P50-00000-00200 | P-A4P011E |
| | 50 | 250 | OSP-P50-00000-00250 | P-A4P011E |
| | 50 | 320 | OSP-P50-00000-00320 | P-A4P011E |
| | 50 | 400 | OSP-P50-00000-00400 | P-A4P011E |
| | 50 | 500 | OSP-P50-00000-00500 | P-A4P011E |
| | 50 | 1000 | OSP-P50-00000-01000 | P-A4P011E |
| | 63 | 125 | OSP-P63-00000-00125 | P-A4P011E |
| | 63 | 160 | OSP-P63-00000-00160 | P-A4P011E |
| | 63 | 200 | OSP-P63-00000-00200 | P-A4P011E |
| | 63 | 250 | OSP-P63-00000-00250 | P-A4P011E |
| | 63 | 320 | OSP-P63-00000-00320 | P-A4P011E |
| | 63 | 400 | OSP-P63-00000-00400 | P-A4P011E |
| | 63 | 500 | OSP-P63-00000-00500 | P-A4P011E |
| | 63 | 1000 | OSP-P63-00000-01000 | P-A4P011E |
| | 80 | 125 | OSP-P80-00000-00125 | P-A4P011E |
| | 80 | 160 | OSP-P80-00000-00160 | P-A4P011E |
| | 80 | 200 | OSP-P80-00000-00200 | P-A4P011E |
| | 80 | 250 | OSP-P80-00000-00250 | P-A4P011E |
| | 80 | 320 | OSP-P80-00000-00320 | P-A4P011E |
| | 80 | 400 | OSP-P80-00000-00400 | P-A4P011E |
| | 80 | 500 | OSP-P80-00000-00500 | P-A4P011E |
| | 80 | 1000 | OSP-P80-00000-01000 | P-A4P011E |

4.2 Power control and regulation

4.2.1 Direction-controlled valves and accessories

4.2.1.2 3/2-direction controlled valves

Electromagnetically actuated

Operational characteristics

Operational pressure: **0 to 16 bar**
Operational temperature: **max. 50°C**

VW-standard: 39D 1360

| CNOMO pilot valve | | | | |
|-------------------|-----------------|----------|-------------|--|
| Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| 24 V (280 mA) | 21-5 | 7955 | 2137702 | 3/2 Way Magnetic valve CNOMO |
| 220 V (64 mA) | 21-5 | 7956 | 2137707 | 3/2 Way Magnetic valve CNOMO |

Single connection plate

Only for repairs anymore / VW-standard: 39 D1355

| Single connection plate | | | | |
|-------------------------|-----------------|----------|-------------|---|
| Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| CNOMO, inkl. O-Ringe | without | | 880 000 03 | Single connection plate |

Vent valve

Operational characteristics

Operational pressure: **2 to 16 bar**
Operational temperature: **-10 to +70°C (G1/2)**
+5 to +70°C (G1)
Flow rate: **2200 l/min (G1/2)**
4200 l/min (G1)

VW-standard: 39D 1380

| 3/2 Exhaust valve | | | | |
|--------------------|-----------------|----------|-------------|------------------------------------|
| Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| G1/2, DOV 410-OR-O | 21-5 | 7706 | 3041000 | Exhaust valve G1/2 |
| G1, DOV 810-OR-O | 21-5 | 7707 | 3023000 | Exhaust valve G1 |

Slow start valve

Operational characteristics

| | | |
|--------------------------|-------------|--------|
| Operational pressure: | 2 to 16 bar | |
| Operational temperature: | -5 to +70°C | (G1/2) |
| Operational temperature: | +5 to +70°C | (G1) |
| Flow rate | 2200 l/min | (G1/2) |
| | 4200 l/min | (G1) |

VW-standard: 39D 1385

| 3/2 slow start valve | | | | |
|----------------------|-----------------|----------|-------------|---------------------------------------|
| Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| G1/2, DAV 410-OR-O | 21-5 | 7708 | 3041100 | Slow start valve G1/2 |
| G1, DAV 810-OR-O | 21-5 | 7710 | 3052500 | Slow start valve G1 |

Connection flange

VW-standard: 39D 1414

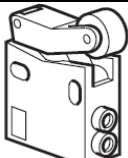
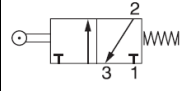
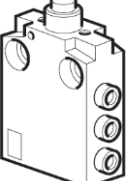
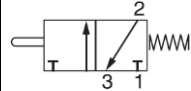
| Connection flange | | | | |
|-------------------------|-----------------|----------|-------------|--|
| Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| For DOV 4 + DAV 4, G1/2 | without | | 3017600 | Connection flange G1/2 |
| For DOV 4 + DAV 4, G1 | without | | 3033100 | Connection flange G1 |

4.2.1.2.4 3/2-direction controlled valves, mechanically actuated

Operational characteristics

| | |
|--------------------------|----------------|
| Operational pressure: | 3 to 8 bar |
| Operational temperature: | -15°C to +60°C |
| Flow rate (ISO6358): | 250l/min |

VW-standard: 39V 16582

| Nominal size 2.5, flow rate 250 l/min, with plug connector Ø4 mm | | | | | | |
|---|---|---|-----------------|----------|--------------|---------------------|
| Image | Symbol | Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  |  | Actuated with plastics roll, Spring return | 21-5 | 7888 | PXC-M521 | PXC |
|  |  | Actuated with steel plunger, Spring return | 21-5 | 7890 | PXC-M601A110 | PXC |


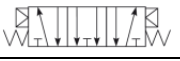


4.2.1.4 5/2- and 5/3-direction controlled valves according to ISO5599-1

Operational characteristics

Operational pressure: 0 to 16 bar
Operational temperature: -10°C to +60°C


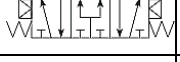



4.2.1.4.1 Electrically actuated

VW-standard: 39D 1341

| Electrically actuated ISO 5599-1 Solenoid valve, 24 VDC, central M12 connection | | | | | | |
|---|-----------------------------------|-------|-----------------|----------|-----------------|---|
| Symbol | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | 5/2 Solenoid valve, monostable | ISO 1 | 21-5 | 7981 | DX1-651/3000882 | ISO 5599-1 Solenoid valve |
|  | 5/3 Solenoid valve, vented centre | ISO 1 | 21-5 | 7982 | DX1-611/3000884 | ISO 5599-1 Solenoid valve |
|  | 5/2 Solenoid valve, monostable | ISO 3 | 21-5 | 8065 | DX3-651/3000883 | ISO 5599-1 Solenoid valve |
|  | 5/3 Solenoid valve, vented centre | ISO 3 | 21-5 | 8066 | DX3-611/3000885 | ISO 5599-1 Solenoid valve |

4.2.1.4.2 Pneumatically actuated

VW-standard: 39D 1342

| Pneumatically actuated ISO 5599-1 valve without manual actuation | | | | | | |
|---|-------------------------------------|-------|-----------------|----------|-----------------|---|
| Symbol | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | 5/2 Solenoid valve, monostable | ISO 1 | 21-5 | 7884 | DX1-451/3000877 | ISO 5599-1 Solenoid valve |
|  | 5/3 Solenoid valve, pressure centre | ISO 1 | without | | DX1-413/3000881 | ISO 5599-1 Solenoid valve |
|  | 5/3 Solenoid valve, vented centre | ISO 1 | 21-5 | 7885 | DX1-411/3000879 | ISO 5599-1 Solenoid valve |
|  | 5/2 Solenoid valve, monostable | ISO 3 | 21-5 | 8069 | DX3-451/3000878 | ISO 5599-1 Solenoid valve |
|  | 5/3 Solenoid valve, vented centre | ISO 3 | without | | DX3-411/3000880 | ISO 5599-1 Solenoid valve |

4.2.1.4.3 Accessories for CNOMO pilot valves

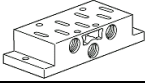
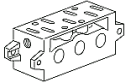
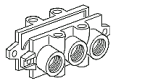

| Accessories for CNOMO pilot valves | | | | |
|---|-----------------|----------|-------------|---|
| Name (Type) | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| Impulse- to Normal operation plate kit 39D1348 | 21-5 | 7984 | 20007984VW | Cover plate |
| Pilot remote control plate 39D1349 | without | | 2007995 | External pilot connection plate |
| Sandwich plate for control signal feedback 39D1350 | 21-5 | 7985 | 20007985VW | External connection plate |

4.2.1.5 Accessories für 5-direction controlled valves according to ISO 5599

VW standard: 39D 1343

VW standard: 39D 1345

VW standard: 39D 1347

| Single connection and linking plates according to ISO 5599-1 | | | | | | |
|--|---|-------|-----------------|----------|--------------|-----------------------------------|
| Image | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | Subbase VDMA, with side ports | ISO 1 | 21-5 | 9067 | P2N-VS512SD | PDE2589TCUK 38-39 |
| | | ISO 3 | 21-5 | 9068 | P2N-YS514SD | PDE2589TCUK 38-39 |
|  | Manifold VDMA C, with bottom ports | ISO 1 | 21-5 | 9071 | P2N-VM512MB | PDE2589TCUK 38-39 |
| | | ISO 3 | 21-5 | 9072 | P2N-YM514MB | PDE2589TCUK 38-39 |
|  | End plate kit | ISO 1 | 21-5 | 9073 | P2N-VM-513ES | PDE2589TCUK 38-39 |
| | | ISO 3 | 21-5 | 9074 | P2N-YM518ES | PDE2589TCUK 38-39 |
| | Elbow plate 39D1343 | ISO 1 | 21-5 | 9075 | 2146677 | Connection plate |
| | | ISO 3 | 21-5 | 9077 | 3065300 | Connection plate |
|  | Blanking plate 39D1345 | ISO 1 | 21-5 | 7909 | P2N-AA5B | PDE2589TCUK 38-39 |
| | | ISO 3 | 21-5 | 7910 | P2N-CA5B | PDE2589TCUK 38-39 |
| | Sandwich regulator, 0,4 – 8 bar, without gauge 39D1347 | ISO 3 | 21-5 | 8075 | PS4237133CP | PDE2589TCUK 44-45 |



4.2.1.8 5/2 and 5/3-direction controlled valves according to ISO 15407-1

Operational characteristics

Operational pressure: 2,0 to 10 bar
 Operational temperature: -15°C to +50°C
 Flow rate Qn size 02: 6.5 l/s
 Flow rate Qn size 01: 15.3 l/s


4.2.1.8.1 Electromagnetically actuated

VW-standard: 39D 1336

| Electrically actuated ISO 15407-1 Solenoid valve, 24VDC, central M12 connection | | | | | | |
|---|---|------|-----------------|----------|----------------|----------------|
| Symbol | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | 5/2-direction controlled valves bistable | 18mm | in process | | under revision | under revision |
| | | 26mm | in process | | under revision | under revision |
|  | 5/2-direction controlled valves, differential, monostable | 18mm | in process | | under revision | under revision |
| | | 26mm | in process | | under revision | under revision |


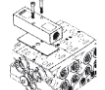
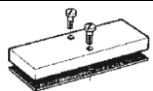
4.2.1.8.2 Pneumatically actuated

VW-standard: 39D 1337

| Pneumatically actuated ISO 15407-1 valve | | | | | | |
|---|---|------|-----------------|----------|----------------|----------------|
| Symbol | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | 5/2-direction controlled valves, bistable | 18mm | in process | | under revision | under revision |
| | | 26mm | in process | | under revision | under revision |

4.2.1.8.3 Connection plates

VW-standard: 39D 1338

| Single connection and linking plates according to ISO 15407-1 | | | | | | |
|---|------------------------------------|-------|-----------------|----------|---------------|--------------------------------|
| Symbol | Name (Type) | Width | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | Subbase with side ports | 26mm | in process | | PL01-02-70 | PDE2589TCUK_34 |
|  | 2-station manifold with side ports | 26mm | in process | | PJLP01-202-70 | PDE2589TCUK_34 |
| | End plate kit for manifold | 26mm | in process | | PEJ01-03-70 | PDE2589TCUK_34 |
|  | Blanking plate | 26mm | in process | | DX01BLK | PDE2589TCUK_34 |


4.2.3 Lock valves

4.2.3.3 Flow control valves

Operational characteristics

Operational pressure: **1.0 to 10 bar**
 Operational temperature: **PTFL: -25°C to +100°C**
VQB: -20°C to +70°C

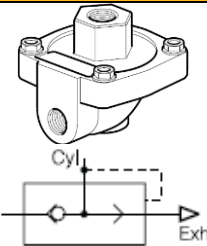
VW-standard: 39D 1387

| Exhaust throttle check valve with outer thread connection | | | | | | |
|---|----------------------|------|-----------------|----------|-------------|----------------------------|
| Image / Symbol | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | Throttle check valve | G1/8 | 21-5 | 7595 | PTFL4-1/8 | 0093UK_E13 |
| | Throttle check valve | G1/4 | 21-5 | 7596 | PTFL4-1/4 | 0093UK_E13 |
| | Throttle check valve | G1/2 | 21-5 | 7598 | PTFL4-1/2 | 0093UK_E13 |

4.2.3.4 Quick-exhaust valves

Operational characteristics

Operational pressure: **0.2 to 10 bar**
 Operational temperature: **-10°C to +80°C**

| Quick-vent valves | | | | | |
|---|------|-----------------|----------|-------------|--------------------------------|
| Image / Symbol | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | G1/8 | 21-5 | 7335 | 0RB12B | PDE2566TCUK_17 |
| | G1/4 | 21-5 | 6983 | P4Q-BA12 | PDE2566TCUK_17 |
| | G1/2 | 21-5 | 7971 | P4Q-CA14 | PDE2566TCUK_17 |

4.2.4 Pressure regulation valves

4.2.4.1 Screw-in pressure regulation valves

Operational characteristics

Operational pressure: 1,0 to 10 bar

Operational temperature: -10°C to +70°C

VW-standard: 39D 1384

| Pressure regulation valve, screw-in, with secondary ventilation | | | | | |
|---|------|-----------------|----------|-------------|---|
| Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| DRV 14 VW RSJ 14 | G1/4 | 21-4 | 6492 | 88006492 | Pressure regulating valve |
| DRV 12 VW RSJ 12 | G1/2 | 21-4 | 6493 | 88006493 | Pressure regulating valve |

4.2.5 Flow control valves

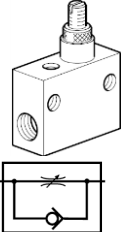
4.2.5.1 Throttle check valves, manually adjustable

Operational characteristics

Operational pressure: max. 10 bar

Operational temperature: -20°C to +70°C

VW-standard: 39V 16382

| Throttle check valve with inner thread connection | | | | | | |
|---|-----------------------|------|-----------------|----------|-------------|-----------------------------------|
| Image / Symbol | Name (Type) | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | Throttle check valves | G1/8 | 21-5 | 6969 | VQB12-Q-0-5 | PDE2566TCUK_13-14 |
| | Throttle check valves | G1/4 | 21-5 | 6970 | VQB22-Q-0-5 | PDE2566TCUK_13-14 |
| | Throttle check valves | G1/2 | 21-5 | 6973 | VQB42-Q-0-5 | PDE2566TCUK_13-14 |

4.3 Energy transfer

4.3.1 Tubing and line connections

4.3.1.3 Flexible tubing

4.3.1.3.1 Polyamide, not welding-spark resistant

Operational characteristics

Operational pressure: **See Data Sheet**

Operational temperature: **-40°C to +100°C**

VW-standard: 39V 16663

| Polyamide tube | | | | | |
|----------------|-----|-----------------|----------|--------------|---------------------------|
| AD | ID | Stock list (LL) | Mat.-No. | Item-Number | Data Sheet |
| 4 | 2 | 24-2 | 1561 | 1100P04C00 | BUL0538UK |
| 6 | 4 | 24-2 | 1562 | 1100P06C00 | BUL0538UK |
| 8 | 5,5 | 24-2 | 1565 | 1100P080055 | BUL0538UK |
| 10 | 7,5 | 24-2 | 1566 | 100P100075 | BUL0538UK |
| 14 | 11 | 24-2 | 1567 | 1100P14C0011 | BUL0538UK |

4.3.1.3.2 Plastic tube, welding-spark repellent (semirigid)

VW-standard: 39D 1475

-> replaced with soft tubing, series: **SGPWPU**, see 4.3.1.3.3

4.3.1.3.3 Plastic tube, welding-spark repellent (soft-lines)

Operational characteristics

Operational pressure: **see Data Sheet**

Operational temperature: **-30°C to +90°C**

VW-standard: 39D 1475

| Prestoweld Soft | | | | | |
|-----------------|----|-----------------|----------|-------------------|-------------------------------|
| AD | ID | Stock list (LL) | Mat.-No. | Item-Number | Data Sheet |
| 4 | 2 | 21-5 | 2045 | SGPWPU4x1/5-100 | BUL 5210-B2UK |
| 4 | 2 | 21-5 | 2052 | SGPWPU4x1/12-100 | BUL 5210-B2UK |
| 4 | 2 | 21-5 | 2053 | SGPWPU4x1/3-100 | BUL 5210-B2UK |
| 4 | 2 | 21-5 | 2054 | SGPWPU4x1/2-100 | BUL 5210-B2UK |
| 4 | 2 | 21-5 | 2055 | SGPWPU4x1/4-100 | BUL 5210-B2UK |
| 6 | 4 | 21-5 | 2046 | SGPWPU6x1/5-100 | BUL 5210-B2UK |
| 6 | 4 | 21-5 | 2056 | SGPWPU6x1/12-100 | BUL 5210-B2UK |
| 6 | 4 | 21-5 | 2057 | SGPWPU6x1/3-100 | BUL 5210-B2UK |
| 6 | 4 | 21-5 | 2058 | SGPWPU6x1/2-100 | BUL 5210-B2UK |
| 6 | 4 | 21-5 | 2059 | SGPWPU6x1/4-100 | BUL 5210-B2UK |
| 8 | 4 | 21-5 | 2047 | SGPWPU8x2/5-100 | BUL 5210-B2UK |
| 8 | 4 | 21-5 | 2066 | SGPWPU8x2/12-100 | BUL 5210-B2UK |
| 8 | 4 | 21-5 | 2067 | SGPWPU8x2/3-100 | BUL 5210-B2UK |
| 8 | 4 | 21-5 | 2068 | SGPWPU8x2/2-100 | BUL 5210-B2UK |
| 8 | 4 | 21-5 | 2069 | SGPWPU8x2/4-100 | BUL 5210-B2UK |
| 10 | 6 | 21-5 | 2048 | SGPWPU10x2/5-100 | BUL 5210-B2UK |
| 10 | 6 | 21-5 | 2070 | SGPWPU10x2/12-100 | BUL 5210-B2UK |
| 10 | 6 | 21-5 | 2071 | SGPWPU10x2/3-100 | BUL 5210-B2UK |

| | | | | | |
|----|----|------|------|---------------------|-------------------------------|
| 10 | 6 | 21-5 | 2072 | SGPWPU10x2/2-100 | BUL 5210-B2UK |
| 10 | 6 | 21-5 | 2073 | SGPWPU10x2/4-100 | BUL 5210-B2UK |
| 12 | 8 | 21-5 | 2049 | SGPWPU12x2/5-100 | BUL 5210-B2UK |
| 12 | 8 | 21-5 | 2074 | SGPWPU12x2/12-100 | BUL 5210-B2UK |
| 12 | 8 | 21-5 | 2075 | SGPWPU12x2/3-100 | BUL 5210-B2UK |
| 12 | 8 | 21-5 | 2076 | SGPWPU12x2/2-100 | BUL 5210-B2UK |
| 12 | 8 | 21-5 | 2077 | SGPWPU12x2/4-100 | BUL 5210-B2UK |
| 14 | 10 | 21-5 | 2050 | SGPWPU14x2/5-100 | BUL 5210-B2UK |
| 14 | 10 | 21-5 | 2078 | SGPWPU14x2/12-100 | BUL 5210-B2UK |
| 14 | 10 | 21-5 | 2079 | SGPWPU14x2/3-100 | BUL 5210-B2UK |
| 14 | 10 | 21-5 | 2100 | SGPWPU14x2/2-100 | BUL 5210-B2UK |
| 14 | 10 | 21-5 | 2101 | SGPWPU14x2/4-100 | BUL 5210-B2UK |
| 16 | 11 | 21-5 | 2051 | SGPWPU16x2,5/5-100 | BUL 5210-B2UK |
| 16 | 11 | 21-5 | 2102 | SGPWPU16x2,5/12-100 | BUL 5210-B2UK |
| 16 | 11 | 21-5 | 2103 | SGPWPU16x2,5/3-100 | BUL 5210-B2UK |
| 16 | 11 | 21-5 | 2104 | SGPWPU16x2,5/2-100 | BUL 5210-B2UK |
| 16 | 11 | 21-5 | 2105 | SGPWPU16x2,5/4-100 | BUL 5210-B2UK |

4.3.1.5 Rubber hoses

Operational characteristics

Operational pressure: **pmax 16 bar**

Operational temperature: **see Data Sheet**

VW-standard: 39D 1256

| Push-Lok hose | | | | | |
|---------------|----|-----------------|----------|------------------|-------------------------------|
| AD | ID | Stock list (LL) | Mat.-No. | Item-Number | Data Sheet |
| 10 | 16 | 21-9 | 6025 | 837-BM-6-BLK-RL | PushLok 837BM |
| 13 | 20 | 21-9 | 6026 | 837-BM-8-BLK-RL | PushLok 837BM |
| 16 | 24 | 21-9 | 6027 | 837-BM-10-BLK-RL | PushLok 837BM |
| 20 | 28 | 21-9 | 6028 | 837-BM-12-BLK-RL | PushLok 837BM |


4.3.1.7 Couplings



ISO 6150, Series B

Operational characteristics

Operational pressure: **35 bar**

Operational temperature: **-20°C to +100°C**

| Lock coupling, no vent, Perbunan seal | | | | | | |
|---|------|-------------------------------------|-----------------|----------|-------------|----------------------------------|
| Image | Size | Name | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | G1/4 | Brass, nickel-plated 39D1421 | 21-9 | 7072 | 23KAIW13MPN | CAT3800U K 54-55 |
| | G3/8 | Steel, nickel-plated 39D1421 | 21-9 | 7073 | 30KAIW17SPN | CAT3800U K 93-94 |

| Plugs w/o valve, nickel-plated steel | | | | | | |
|---|------|------------------------------|-----------------|----------|-------------|------------------------------------|
| Image | Size | Name | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | G1/4 | female thread 39D1422 | 21-9 | 7077 | 23SFIW13SXN | CAT3800U K_54-55 |
| | G3/8 | female thread 39D1422 | 21-9 | 7078 | 30SFIW17SXN | CAT3800U K_93-94 |
| | G1/2 | female thread 39D1422 | 21-9 | 7082 | 37SFIW21SXN | CAT3800U K_111-112 |
|  | G1/4 | male thread 39D1423 | 21-9 | 7045 | 23SFAW13SXN | CAT3800U K_54-55 |
| | G3/8 | male thread 39D1423 | 21-9 | 7046 | 30SFAW17SXN | CAT3800U K_93-94 |
| | G1/2 | male thread 39D1423 | 21-9 | 7047 | 37SFAW21SXN | CAT3800U K_111-112 |


4.3.4 Filter

Operational characteristics

Max. inflow pressure: **17 bar**

Operational temperature: **-20°C to +80°C**

VW-standard: 39D 1436

| Filter 0,1µm | | | | | | |
|--|-------|-------------|-----------------|----------|-------------|-------------------------------|
| Image | Size | Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | G 1/4 | 0,1µ | 21-11 | 7898 | 89227898 | Filter 0,1 my |
| | G 1/2 | 0,1µ | 21-11 | 3426 | P3KFA/C001 | Filter 0,1 my |
| | G 1 | 0,1µ | 21-11 | 3428 | 89223428 | Filter 0,1 my |

4.3.5 Pressure regulators

4.3.5.1 Pressure regulation valve, manually adjustable

Operational characteristics

Operational pressure: **max. 17 bar**

Operational temperature: **-20°C to +80°C**

VW-standard: 39D 1383

| Pressure regulator, manually adjustable, without gauge, 0-8 bar, with raster | | | | | |
|--|-------------|-----------------|----------|-------------|--|
| Size | Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| G 1/4 | | 21-4 | 7899 | 3046300 | Pressure regulator w. raster |
| G 1/2 | | 21-4 | 6487 | P3KRA/C002 | Pressure regulator w. raster |
| G 1 | | 21-4 | 6489 | 3046900 | Pressure regulator w. raster |

4.3.5.3 Pressure regulation valve, electronically controlled

Analogue G1/2

Operational characteristics

Operational pressure: **max. 16 bar**

Operational temperature: **-20°C to +50°C**

VW-standard: 39D 1381

| Electronic Pressure Regulator | | | | |
|-------------------------------|-----------------|----------|-------------|---|
| Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| G 1/2 | 21-4 | 6503 | 3505100 | Electronic pressure regulator |

Available accessories

2,0 m Cabel with mit mounted plug: Item Number 5068625

2,5 m Cabel with mit mounted plug: Item Number 5068626


4.3.6 Lubricator

Operational characteristics

Operational pressure: **max. 17 bar**

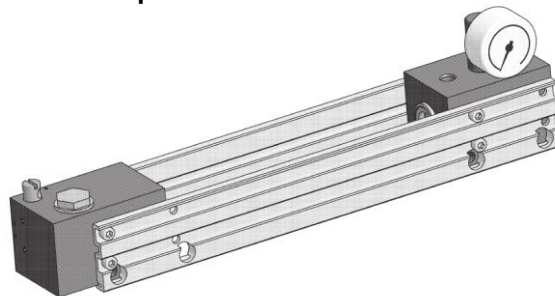
Operational temperature: **-20°C bis +80°C**

VW-standard: 39D 1439

| Lubricator for Frame block MRS | | | | | |
|---|------|-----------------|----------|-------------|----------------------------|
| Image | Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  | G1/2 | 21-10 | 6271 | P3KLA14SMN | Lubricator |

4.3.7 Frame block MRS

Pre-mounted units on request.



VW-standard: 39D 1400

| Frame block MRS | | | | |
|-----------------|-----------------|----------|-------------|---------------------------------|
| Size | Stock list (LL) | Mat.-No. | Item Number | Data sheet |
| G1/2 | 21-5 | 7714 | 3098400 | Frame block MRS |
| G1 | 21-5 | 7715 | 3523200 | Frame block MRS |

4.3.7.1 Diverter block (MRS)

| For frame block | | | | |
|-----------------|-----------------|----------|-------------|--------------------------------|
| Size | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| G1/2 | 21-5 | 7712 | 89219222 | Diverter block |
| G1 | 21-5 | 7713 | 89219221 | Diverter block |

4.4 Additional devices

4.4.2 Pressure switch

4.4.2.1 For overpressure

VW-standard: 39D 1466

| Overpressure pressure switch | | | | | |
|------------------------------|--|-----------------|----------|-------------|---------------------------------|
| Description | Connections | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
| 0,5 - 16 bar | Pneu.: G 1/4 female thread Electr.: DIN 43650 | 21-5 | 6871 | 88000005 | Pressure switch |

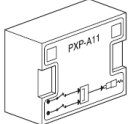
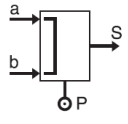
4.4.5 Two- hand operation

4.4.5.2 Two-hand operated blocks according to EN 574

Operational characteristics

Operational pressure: **3 bis 8 bar**

Operational temperature: **-5°C bis +60°C**

| Single control module | | | | | | |
|---|---|---------------------------|-----------------|----------|-------------|---|
| Image | Symbol | Connection | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|  |  | Quick Connector Ø 4 mm | 21-5 | 7895 | PXP-A11 | PDE2500GPDE 269-270 |

4.5 Pneumatics controls

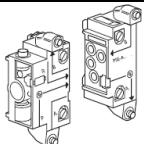
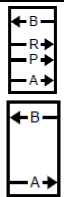
4.5.1 Fluidics elements and Accessories

4.5.1.2 Logic processing components

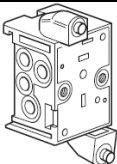
Operational characteristics

Operational pressure: **3 to 8 bar**
 Operational temperature: **-15°C to +60°C**
 Flow rate according to ISO 6258: **180 l/min**

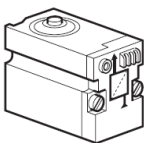

4.5.1.2.1 In/Output components

| Image | Sym- bol | Logic Function | Description | Connection | Mat.-No. | Item Number | Data Sheet |
|---|---|-------------------|----------------------------------|-------------------------------------|----------|----------------|----------------------------|
|  |  | | Air supply and ventilation block | Swivel-mounted plug connector Ø 4mm | without | PSE-A12 | PD0C 00029 |
| | | | Deviation, standard | Swivel-mounted plug connector Ø 4mm | without | PSD-A12 | PD0C 00029 |
| | | | Deviation f. external control | Swivel-mounted plug connector Ø 4mm | without | PSD-B12 | PD0C 00029 |

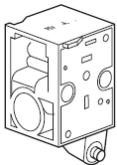

4.5.1.2.2 Step module subbase

| Image | Sym- bol | Description | Connection | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|---|-------------|-------------|-------------------------------------|-----------------|----------|-------------|----------------------------|
|  | | Base plate | Swivel-mounted plug connector Ø 4mm | 21-5 | 8028 | PSB-A12 | PD0C 00029 |

4.5.1.2.3 Memory Relay

| Image | Sym- bol | Logic Function | Description | Connection | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|---|---|-------------------|---|-----------------------|-----------------|----------|-------------|----------------------------|
|  |  | | Pressure display for the pneumatic output signal. | Manual actuation | 21-5 | 8026 | PSM-A10 | PD0C 00029 |
| | | | No manual actuation | On base plate PSB-A12 | without | | PSM-B10 | PD0C 00029 |

4.5.1.2.4 Step module subbase

| Image | Sym- bol | Logic Function | Connection | Mat.-No. | Item Number | Mat.-No. |
|---|---|---|-------------------------------------|----------|-------------|----------------------------|
|  |  | Can be installed between base plate and memory relay and interrupts the process when the limit switch feedback of the following step is already present; (limit switch control) | Swivel-mounted plug connector Ø 4mm | without | PSV-A12 | PD0C 00029 |

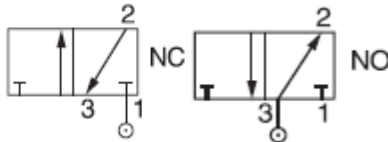
4.5.2 Switch valves, operating panels and accessories

4.5.2.4 Manual signal input elements for installation in operating panels Ø 22.5

Operational characteristics

Operational pressure: **1 to 10 bar**
 Operational temperature: **-15°C to +60°C**
 Flow rate according to ISO 6258: **120 l/min**

4.5.2.4.1 3/2 direction controlled valves with carrier plate



The 3/2-valves of the build PXP-B4 can be used as normally closed (NC) or normally open (NO) 3/2-direction controlled valves if the air supply is connected either at input 1 or input 3

| Image | Symbol | Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|-------|--------|---|-----------------|--------------|-------------|-----------------------------|
| | | <ul style="list-style-type: none"> plunger actuation, actuating force at 6 bar 4,5N Spring return plug connector Ø 4mm | 21-5 | 7906 7907 | PXB-4131B | PDE2587TCUK |

4.5.2.4.2 Push buttons

| Image | Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|-------|--|-----------------|----------|-------------|-----------------------------|
| | Flush button, spring-returned, metal head, black | without | | ZB4-BA2 | PDE2587TCUK |
| | Flush button, spring-returned, metal head, red | without | | ZB4-BA4 | PDE2587TCUK |
| | Flush button, spring-returned, plastics head, black | without | | ZB5-AA2 | PDE2587TCUK |
| | Flush button, spring-returned, plastics head red | without | | ZB5-AA4 | PDE2587TCUK |
| | Mushroom button Ø40 mm, metal head, black, spring-returned | 21-5 | 8029 | ZB4-BC2 | PDE2587TCUK |
| | Mushroom button Ø60 mm, metal head, black, spring-returned | 21-5 | 8029 | ZB4-BR2 | PDE2587TCUK |

4.5.2.6 Display elements

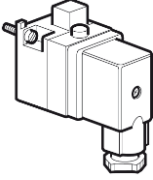
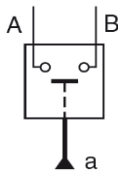
| Bild und Symbol | Beschreibung | Farbe betätigt | Lagerliste (LL) | Mat.-Nr. | Artikelnummer | Datenblatt |
|-----------------|--|----------------|-----------------|--------------|----------------------|-----------------------------|
| | Betriebsdruck 1-8 bar Betriebstemperatur -15° bis +60°C Steckanschluss Ø 4mm | weiß blau | 21-5 21-5 | 7924 7925 | PXV F111 PXV-F161 | PDE2587TCUK |
| | Druckanzeiger, Prestolok push-in fitting | rot | ohne | | TS2PK4 | 0093UK_B22 |

4.5.3 Special devices

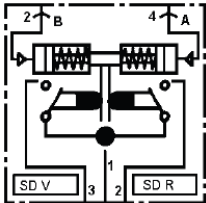
4.5.3.1 p/U transformer

Operational characteristics

Operational pressure: **1 to 10 bar**
 Operational temperature: **-15°C to +60°C**

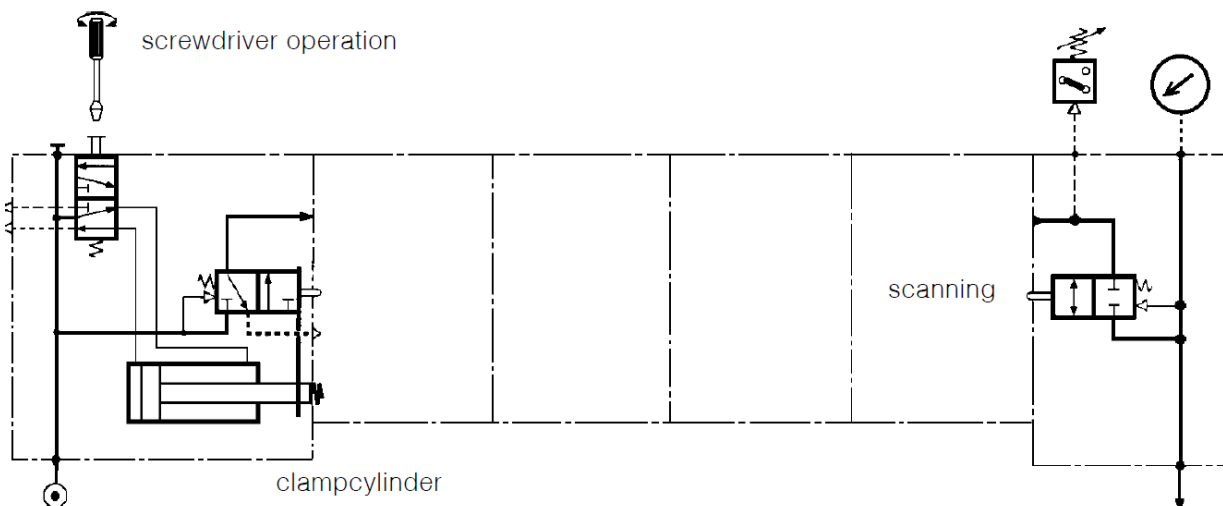
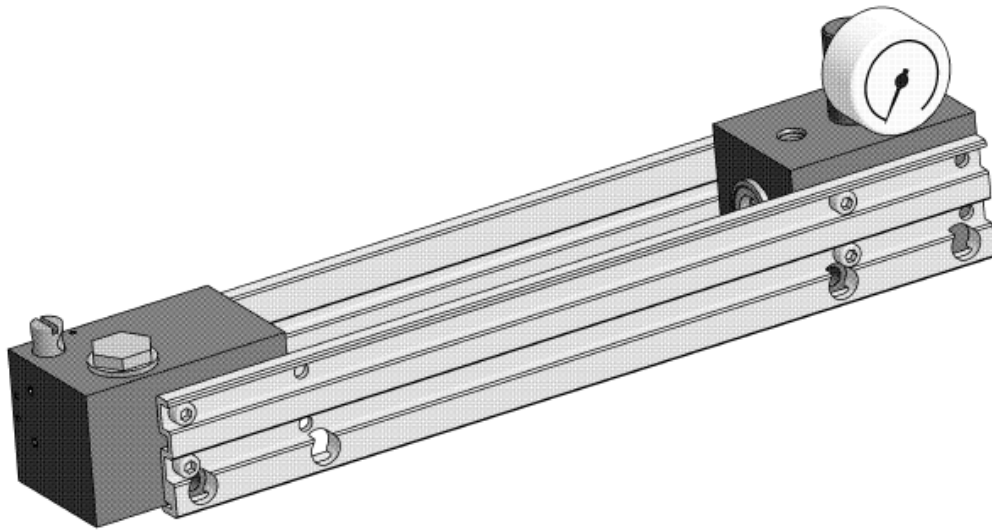
| Image | Symbol | Actuation | Stock list (LL) | Mat-No. | Item Number | Data Sheet |
|---|---|--|-----------------|---------|-------------|----------------------------|
|  |  | Push button 22x30 socket plug connector Ø 4mm, swivel- mounted | 21-5 | 7929 | PRE-A10 | PD0C 00029 |

4.5.3.2 Differential pressure switch

| Symbol | Description | Stock list (LL) | Mat.-No. | Item Number | Data Sheet |
|--|--|-----------------|----------|-------------|--|
|  | Differential pressure switch DDSK 2-F-ON-3-O-O 39D1471 | 21-5 | 6632 | 3037600 | Differential pressure switch |
| | Quick Coupling 39D1472 | 21-5 | 6633 | 3037700 | Quick coupling |
| | Connection block 39D1473 | 21-5 | 6634 | 88006634 | Connection block |

A Appendix

A.1 Manual for frame block MRS



Technical description

Goal

To be able to change air preparation units, in every desired sequence, quick and without tooling. Even without disconnection air or tubing or re-connect couplers.

Application area

In these compressed air lines, in which disturbances should be limited and if there is a disturbances the 'down time' should be as low as possible. In other production area's where a quick change of units is a must.

Construction and functionality

This quick clamping device is build up out of a adjustable frame, which can be set into a 3, 4 of 5 position setting. Either one of these settings can contain a filter, regulator (manual or electric), lubricator, quick exhaust valve, slow-start valve or intermediate blocks for different applications.

Activating

To open up the airflow, you have to open 'manually' the lever on top of the entry block, which energizes the clamping device. The clamping device clamps all units in the frame block together. When all units are

in place, the air starts to flow. When one unit is missing or mounted wrongly, the clamping device senses this and will **NOT** open the air flow.

Closing

When closing the air flow, by engaging the lever on the entry block. All units will be released and can be taken out or exchanged. During this operation as special valve in the exit block, prevents that the connected machinery will be exhausted, in other words the secondarily side will stay pressurised. On the exit block are two available connections which can be used for gauges, pressure switches or for pneumatic feedback signals.

Technical data

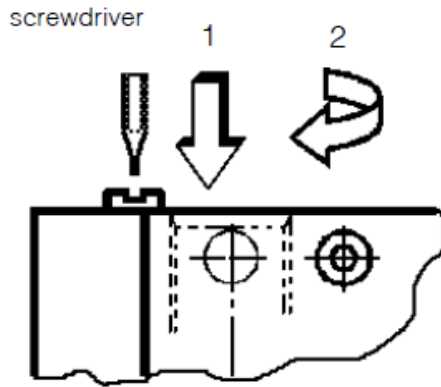
This frame block (MRS) offers the possibility to have a maintenance friendly airpreparation unit.

Units which can be placed within this frame block (either _"or 1")

- Filter
- Manual regulator
- Proportional valve
- Intermediate flange
- Diverter block
- Quick exhaust valve
- Slow start / quick exhaust valve
- Lubricator
- Weight compensation module.

The frame block can be set in a 3, 4 or 5 position unit.

By engaging the lever to the right , the clamping system will be engaged, and all units will be clamped together. When engaging the lever to the left frame block will be vented and all units will be released only the secondarily side will stay pressurised.



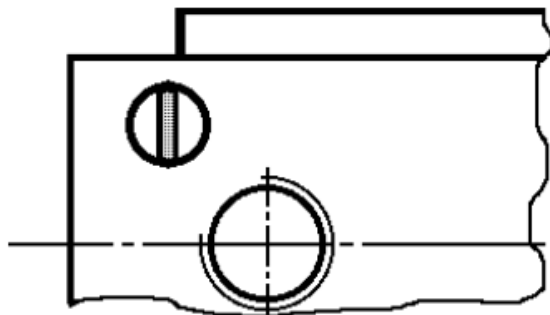
Delivery contents:

Open

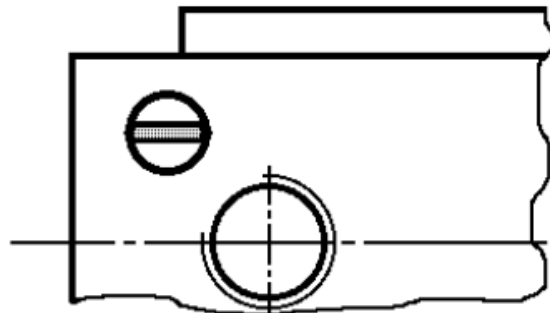
Push the engaging knob clockwards and turn right by means of a screwdriver. In case of a frameblock with lever just turn the lever to the right. Knob or lever will be locked into position.

Closed

Push the engaging knob clockwards and turn left by means of a screwdriver. In case of a frameblock with lever just turn the lever to the left. Knob or lever will be locked into position.



Open



Closed

Delivery contents



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| 39D 20000..... | 6 |
| 39V 16270..... | 9 |
| 39V 16382..... | 21 |
| 39V 16582..... | 16 |
| 39V 16663..... | 22 |

A.3 Index of VW material numbers – Item Number

| LL | Materialnummer | Artikelnummer | LL | Materialnummer | Artikelnummer |
|------|----------------|---------------------|------|----------------|-----------------|
| 24-2 | 1561 | 1100P04C00 | 21-5 | 2153 | P1D-S063MS-0050 |
| 24-2 | 1562 | 1100P06C00 | 21-5 | 2154 | P1D-S063MS-0080 |
| 24-2 | 1565 | 1100P080055 | 21-5 | 2155 | P1D-S063MS-0100 |
| 24-2 | 1566 | 1100P100075 | 21-5 | 2156 | P1D-S063MS-0160 |
| 24-2 | 1567 | 1100P14C0011 | 21-5 | 2157 | P1D-S080MS-0080 |
| 21-5 | 2045 | SGPWPU4x1/5-100 | 21-5 | 2158 | P1D-S080MS-0100 |
| 21-5 | 2046 | SGPWPU6x1/5-100 | 21-5 | 2159 | P1D-S080MS-0125 |
| 21-5 | 2047 | SGPWPU8x2/5-100 | 21-5 | 2160 | P1D-S100MS-0160 |
| 21-5 | 2048 | SGPWPU10x2/5-100 | 21-5 | 2161 | P1D-S125MS-0200 |
| 21-5 | 2049 | SGPWPU12x2/5-100 | 21-5 | 2170 | P1D-S032MS-0025 |
| 21-5 | 2050 | SGPWPU14x2/5-100 | 21-5 | 2172 | P1D-S050MS-0125 |
| 21-5 | 2051 | SGPWPU16x2,5/5-100 | 21-5 | 2173 | P1D-S063MS-0125 |
| 21-5 | 2052 | SGPWPU4x1/12-100 | 21-5 | 2174 | P1D-S063MS-0200 |
| 21-5 | 2053 | SGPWPU4x1/3-100 | 21-5 | 2175 | P1D-S080MS-0025 |
| 21-5 | 2054 | SGPWPU4x1/2-100 | 21-5 | 2176 | P1D-S080MS-0050 |
| 21-5 | 2055 | SGPWPU4x1/4-100 | 21-5 | 2177 | P1D-S080MS-0160 |
| 21-5 | 2056 | SGPWPU6x1/12-100 | 21-5 | 2178 | P1D-S080MS-0200 |
| 21-5 | 2057 | SGPWPU6x1/3-100 | 21-5 | 2179 | P1D-S100MS-0025 |
| 21-5 | 2058 | SGPWPU6x1/2-100 | 21-5 | 2180 | P1D-S100MS-0050 |
| 21-5 | 2059 | SGPWPU6x1/4-100 | 21-5 | 2181 | P1D-S100MS-0080 |
| 21-5 | 2066 | SGPWPU8x2/12-100 | 21-5 | 2182 | P1D-S100MS-0100 |
| 21-5 | 2067 | SGPWPU8x2/3-100 | 21-5 | 2183 | P1D-S100MS-0200 |
| 21-5 | 2068 | SGPWPU8x2/2-100 | 21-5 | 2184 | P1D-S125MS-0100 |
| 21-5 | 2069 | SGPWPU8x2/4-100 | 21-5 | 2264 | P1D-S125MS-0050 |
| 21-5 | 2070 | SGPWPU10x2/12-100 | 21-5 | 2265 | P1D-S125MS-0080 |
| 21-5 | 2071 | SGPWPU10x2/3-100 | 21-5 | 2272 | P1D-S125MS-0125 |
| 21-5 | 2072 | SGPWPU10x2/2-100 | 21-5 | 2273 | P1D-S125MS-0160 |
| 21-5 | 2073 | SGPWPU10x2/4-100 | 21-5 | 2274 | P1D-S125MS-0250 |
| 21-5 | 2074 | SGPWPU12x2/12-100 | 21-5 | 2275 | P1D-T160MS-0100 |
| 21-5 | 2075 | SGPWPU12x2/3-100 | 21-5 | 2276 | P1D-T160MS-0160 |
| 21-5 | 2076 | SGPWPU12x2/2-100 | 21-5 | 2277 | P1D-T160MS-0200 |
| 21-5 | 2077 | SGPWPU12x2/4-100 | 21-5 | 2280 | P1D-T160MS-0250 |
| 21-5 | 2078 | SGPWPU14x2/12-100 | 21-5 | 2281 | P1D-T160MS-0400 |
| 21-5 | 2079 | SGPWPU14x2/3-100 | 21-5 | 2282 | P1D-T160MS-0500 |
| 21-5 | 2100 | SGPWPU14x2/2-100 | 21-5 | 2283 | P1D-T200MS-0160 |
| 21-5 | 2101 | SGPWPU14x2/4-100 | 21-5 | 2284 | P1D-T200MS-0200 |
| 21-5 | 2102 | SGPWPU16x2,5/12-100 | 21-5 | 2285 | P1D-T200MS-0400 |
| 21-5 | 2103 | SGPWPU16x2,5/3-100 | 21-5 | 2286 | P1D-T200MS-0500 |
| 21-5 | 2104 | SGPWPU16x2,5/2-100 | 21-5 | 2290 | P1C-4NMD |
| 21-5 | 2105 | SGPWPU16x2,5/4-100 | 21-5 | 2291 | P1C-4KMD |
| 21-5 | 2113 | P1D-S050MS-0050 | 21-5 | 2292 | P1C-4PMD |
| 21-5 | 2146 | P1D-S032MS-0050 | 21-5 | 2293 | P1C-4QMD |
| 21-5 | 2147 | P1D-S032MS-0080 | 21-5 | 2294 | P1C-4RMD |
| 21-5 | 2148 | P1D-S050MS-0025 | 21-5 | 2298 | P1C-4KMT |
| 21-5 | 2150 | P1D-S050MS-0080 | 21-5 | 2299 | P1C-4MMT |
| 21-5 | 2151 | P1D-S050MS-0100 | 21-5 | 2300 | P1C-4NMT |
| 21-5 | 2152 | P1D-S063MS-0025 | 21-5 | 2301 | P1C-4PMT |
| | | | 21-5 | 2302 | P1C-4QMT |

Component specification



| LL | Materialnummer | Artikelnummer |
|-------|----------------|------------------|
| 21-5 | 2303 | P1C-4RMT |
| 21-5 | 2304 | P1C-4SMTB |
| 21-5 | 2305 | P1C-4TMTB |
| 21-5 | 2306 | P1C-4KMCA |
| 21-5 | 2307 | P1C-4MMCA |
| 21-5 | 2308 | P1C-4NMCA |
| 21-5 | 2309 | P1C-4PMCA |
| 21-5 | 2310 | P1C-4QMCA |
| 21-5 | 2311 | P1C-4RMCA |
| 21-5 | 2316 | P1C-4KRC |
| 21-5 | 2317 | P1C-4MRC |
| 21-5 | 2318 | P1C-4PRC |
| 21-5 | 2319 | P1C-4RRC |
| 21-5 | 2320 | KY6863 |
| 21-5 | 2321 | P1C-4KRS |
| 21-5 | 2322 | P1C-4MRS |
| 21-5 | 2323 | P1C-4PRS |
| 21-5 | 2324 | P1C-4RRS |
| 21-5 | 2325 | KY6863 |
| 21-5 | 2326 | P1C-4KMB |
| 21-5 | 2327 | P1C-4MMB |
| 21-5 | 2328 | P1C-4NMB |
| 21-5 | 2329 | P1C-4PMB |
| 21-5 | 2330 | P1C-4QMB |
| 21-5 | 2331 | P1C-4RMB |
| 21-5 | 2332 | PD23410 |
| 21-5 | 2333 | PD24924 |
| 21-5 | 2334 | P1C-4KMA |
| 21-5 | 2335 | P1C-4MMA |
| 21-5 | 2336 | P1C-4NMA |
| 21-5 | 2337 | P1C-4PMA |
| 21-5 | 2338 | P1C-4QMA |
| 21-5 | 2339 | P1C-4RMA |
| 21-11 | 3426 | P3KFA/C001 |
| 21-11 | 3428 | 89223428 |
| 21-9 | 6025 | 837-BM-6-BLK-RL |
| 21-9 | 6026 | 837-BM-8-BLK-RL |
| 21-9 | 6027 | 837-BM-10-BLK-RL |
| 21-9 | 6028 | 837-BM-12-BLK-RL |
| 21-10 | 6271 | P3KLA14SMN |
| 21-4 | 6487 | P3KRA/C002 |
| 21-4 | 6489 | 3046900 |
| 21-4 | 6492 | 88006492 |
| 21-4 | 6493 | 88006493 |
| 21-4 | 6503 | 3505100 |
| 21-5 | 6632 | 3037600 |
| 21-5 | 6633 | 3037700 |
| 21-5 | 6634 | 88006634 |
| 21-5 | 6871 | 88000005 |
| 21-5 | 6969 | VQB12-Q-0-5 |
| 21-5 | 6970 | VQB22-Q-0-5 |
| 21-5 | 6973 | VQB42-Q-0-5 |

| LL | Materialnummer | Artikelnummer |
|-------|----------------|-----------------|
| 21-5 | 6983 | P4Q-BA12 |
| 21-9 | 7045 | 23SFAW13SXN |
| 21-9 | 7046 | 30SFAW17SXN |
| 21-9 | 7047 | 37SFAW21SXN |
| 21-9 | 7072 | 23KAIW13MPN |
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